



## amended Sequence Listing.txt

## [Sequence Listing]

&lt;110&gt; CJ Corporation

<120> An alkaline lipase from *Vibrio metschnikovii* RH530 and a nucleotide sequence encoding the same

&lt;160&gt; 7

&lt;170&gt; KopatentIn 1.71

&lt;210&gt; 1

&lt;211&gt; 2578

&lt;212&gt; DNA

<213> *Vibrio metschnikovii* RH530

<400>	1					
agcttgcact	ttatcagcca	atacttgcat	cggtaactcg	gcgggcactt	gtgcccagt	60
gcggcggcta	cgtacttcag	agattaaggc	catgacttagc	gtttcatata	aatgggtgc	120
tcgccccacgt	ccttgaatgg	cgatacgcag	ctggcgtttgc	ccctcttgct	tgaggatccc	180
gatttcaatt	tgccgatcg	gttggaaaatg	gaaatagcgt	aatgactgt	aaaaagtacg	240
attcaaatga	ggtgcatgt	gctctaaata	aacaatgtcg	gcatccgaaa	agcgcaatga	300
agccaaactga	ttgatttctt	ggcgtaacttc	ctctaataaaa	tcgctaattgt	cttcattcact	360
gcmcacaatc	aattcatagc	gcacctcaac	atccggatac	aacgaatgaa	cggcctgcat	420
catattgatt	ttataggcat	caagatccaa	taaactgcgg	ataaaaaagag	gagaaaaatag	480
gcgatcgctc	atgatgatgc	catcctttcg	ttcggtttca	ttcagtcatt	acgttagtaa	540
caacgtgttgc	ctaactttgg	gcgaacaata	aagtaccctt	gtaagtttgt	caacttttgt	600
gacaaaccta	gtcagtcgtt	atttggcctt	attataatta	tggatattga	ggggtaagga	660
cgtagtcata	acaacaatta	cagtactctt	gttatctgag	ttatgtttgt	cacaaagtct	720
tatttacatt	tgaccatcat	catgcactta	cctaaaataa	gcccggttgc	tattaggaa	780
gccattatga	ttgtcaactat	cgatatgatt	tgtctgcgtc	ttgcgcccga	atctatccag	840
gttttactgg	tgaaacgctc	taatccaaat	cggccagatt	gtggtaaatg	ggcattgcct	900
ggcgggatag	tgtatgacga	agatatgacc	gctcatggtg	gagaacctgt	cgatgaggat	960
tttgatgcag	cgagacgacg	tatttgcgg	caaaaagtcc	atacttatcc	taattttattc	1020
agcgatccgc	tggttgatgg	caacccaaa	cgcgatccga	atggttggag	tgtcagttt	1080
tcccattacg	ctttattaaa	cccggttgc	gtcaaacaaa	tagaagattt	tggatcgac	1140
cccgagcg	ctaattgggtt	tgcgttgc	actttactca	aagaagaaat	gccgctggct	1200
tttgatcatg	tcgcgcaat	tcagcatgcg	tggcaaaaat	tacgcgtgc	ggttgaatac	1260
acatccgtgg	tactattttc	attagaaaaa	gagtttttag	tggcgatat	tattgatgcc	1320
tacgccaat	ttggcgatcg	agttaatcgc	atgaccatta	aacgcccgtt	gatcaatacc	1380

amended Sequence Listing.txt

gggggtgatcg tcagtaccaa	aaaatggcc gcatcttgc	aaggcaaagg agccaaacca	1440
gccaccgttt atcgtcttgc	cagtcatgaa gtcacctatt	ttcaaacctg tttacgaggt	1500
taactgttcg aaaatcgtgt	acagtaggtg atgatgtcaa	ttgatgatag gtaggaagca	1560
atgcagatta ttcttgttca	tggactctat atgcattggct	tggtaatgca tccgcttagt	1620
catcgctgc ataaaattggg	ttatcgtact caaacattta	gctacaactc actcgctatc	1680
gatgatgagg ccattttcg	ccgccttgac cgatcgctca	ctcatgcctc gcctaattgt	1740
ttagtcggac acagtttggg	cggattggtg atcaaacgtt	atctagaatc gcgcgaccg	1800
tcctgtgaaa ccctctccca	tgtcgctgcc atcggtcac	ctttgcaagg agcttccatt	1860
gtcaataaaa ttgagcaatt	aggtaggg gtggacttag	gtaattcagc agaatttggg	1920
ttaaaagaac acgacgacga	atcccgttat ccacaaaaat	caggcagtat tgcaggaacg	1980
atacctttag ggctgcgcag	cctttactg cgcgatccac	tggactccga tggtaccgtc	2040
acagtagaaag aaacaaaaat	agctggcatg acagatata	tcgcgatatc caccacttca	2100
tacgagaatg ctgtttaatc	attccgttgc cgagcaaatc	gaccacttcc ttcttatg	2160
ccgcttccgg cgctaaagcc	gtttaaactt cagatgatag	tgtacttcgt atcaaaccga	2220
tggtgattga aaacataccc	accattcatt cagaataaga	cggtgccatc atcagagctt	2280
tccccatgcaa taaacaatcc	gcgactttac gtctggccgc	tttaactaaa ttggcaagtg	2340
tctgcccga tacgctgatg	ccgcatagtt aagccagccc	cgacacccgc caacacccgc	2400
tgacgcgccc tgacggcctt	gtctgctccc ggcattccgt	tacagacaag ctgtgaccgt	2460
ctccgggagc tgcattgtgtc	agaggtttc accgtcatca	ccgaaacgcg cgagacgaaa	2520
gggcctcgtg atacgcctat	ttttataggt taatgtcatg	ataataatgg tttcttag	2578

<210> 2  
<211> 798  
<212> DNA  
<213> Vibrio metschnikovii RH530

<220>  
<221> CDS  
<222> (1)..(798)  
<223> valL1 gene

<400> 2 atg ttt gtc aca aag tct tat tta cat ttg acc atc atc atg cac tta	48
Met Phe Val Thr Lys Ser Tyr Leu His Leu Thr Ile Ile Met His Leu	
1 5 10 15	
cct aaa ata agc ccg ttg ttt att agg gaa gcc att atg att gtc act	96
Pro Lys Ile Ser Pro Leu Phe Ile Arg Glu Ala Ile Met Ile Val Thr	
20 25 30	
atc gat atg att tgt ctg cgt ctt gcg ccg aaa tct atc cag gtt tta	144
Ile Asp Met Ile Cys Leu Arg Leu Ala Pro Lys Ser Ile Gln Val Leu	

## amended Sequence Listing.txt

35

40

45

ctg gtg aaa cgc tct aat cca aat cgg cca gat tgt ggt aaa tgg gca Leu Val Lys Arg Ser Asn Pro Asn Arg Pro Asp Cys Gly Lys Trp Ala 50 55 60	192
ttg cct ggc ggg ata gtg tat gac gaa gat atg acc gct cat ggt gga Leu Pro Gly Gly Ile Val Tyr Asp Glu Asp Met Thr Ala His Gly Gly 65 70 75 80	240
gaa cct gtc gat gag gat ttt gat gca gcg aga cga cgt att tgt cgg Glu Pro Val Asp Glu Asp Phe Asp Ala Ala Arg Arg Arg Ile Cys Arg 85 90 95	288
caa aaa gtc cat act tat cct aat ttt atc agc gat ccg ctg gtt gat Gln Lys Val His Thr Tyr Pro Asn Phe Ile Ser Asp Pro Leu Val Asp 100 105 110	336
ggc aac ccc aaa cgc gat ccg aat ggt tgg agt gtc agt att tcc cat Gly Asn Pro Lys Arg Asp Pro Asn Gly Trp Ser Val Ser Ile Ser His 115 120 125	384
tac gct tta tta aac ccg tgg aat gtc aaa caa ata gaa gat ttt ggt Tyr Ala Leu Leu Asn Pro Trp Asn Val Lys Gln Ile Glu Asp Phe Gly 130 135 140	432
atc gac ccc gag cgc gct aat tgg ttt gat ctt cat act tta ctc aaa Ile Asp Pro Glu Arg Ala Asn Trp Phe Asp Leu His Thr Leu Leu Lys 145 150 155 160	480
gaa gaa atg ccg ctg gct ttt gat cat gtc gcg caa att cag cat gcg Glu Glu Met Pro Leu Ala Phe Asp His Val Ala Gln Ile Gln His Ala 165 170 175	528
tgg caa aaa tta cgc gct gcg gtt gaa tac aca tcc gtg gta cta ttt Trp Gln Lys Leu Arg Ala Ala Val Glu Tyr Thr Ser Val Val Leu Phe 180 185 190	576
tca tta gaa aaa gag ttt tta gtg gcg gat att att gat gcc tac gcc Ser Leu Glu Lys Glu Phe Leu Val Ala Asp Ile Ile Asp Ala Tyr Ala 195 200 205	624
aaa ttt ggc gtc gaa gtt aat cgc atg acc att aaa cgc cgc ttg atc Lys Phe Gly Val Glu Val Asn Arg Met Thr Ile Lys Arg Arg Leu Ile 210 215 220	672
aat acc ggg gtg atc gtc agt acc aat aaa atg gcc gca tct tgt aaa Asn Thr Gly Val Ile Val Ser Thr Asn Lys Met Ala Ala Ser Cys Lys 225 230 235 240	720
ggc aaa gga gcc aaa cca gcc acc gtt tat cgt ctt gcc agt cat gaa Gly Lys Gly Ala Lys Pro Ala Thr Val Tyr Arg Leu Ala Ser His Glu 245 250 255	768
gtc acc tat ttt caa acc tgt tta cga ggt Val Thr Tyr Phe Gln Thr Cys Leu Arg Gly 260 265	798

<210> 3  
<211> 266  
<212> PRT  
<213> Vibrio metschnikovii RH530

amended Sequence Listing.txt

<400> 3  
Met Phe Val Thr Lys Ser Tyr Leu His Leu Thr Ile Ile Met His Leu  
1 5 10 15  
  
Pro Lys Ile Ser Pro Leu Phe Ile Arg Glu Ala Ile Met Ile Val Thr  
20 25 30  
  
Ile Asp Met Ile Cys Leu Arg Leu Ala Pro Lys Ser Ile Gln Val Leu  
35 40 45  
  
Leu Val Lys Arg Ser Asn Pro Asn Arg Pro Asp Cys Gly Lys Trp Ala  
50 55 60  
  
Leu Pro Gly Gly Ile Val Tyr Asp Glu Asp Met Thr Ala His Gly Gly  
65 70 75 80  
  
Glu Pro Val Asp Glu Asp Phe Asp Ala Ala Arg Arg Arg Ile Cys Arg  
85 90 95  
  
Gln Lys Val His Thr Tyr Pro Asn Phe Ile Ser Asp Pro Leu Val Asp  
100 105 110  
  
Gly Asn Pro Lys Arg Asp Pro Asn Gly Trp Ser Val Ser Ile Ser His  
115 120 125  
  
Tyr Ala Leu Leu Asn Pro Trp Asn Val Lys Gln Ile Glu Asp Phe Gly  
130 135 140  
  
Ile Asp Pro Glu Arg Ala Asn Trp Phe Asp Leu His Thr Leu Leu Lys  
145 150 155 160  
  
Glu Glu Met Pro Leu Ala Phe Asp His Val Ala Gln Ile Gln His Ala  
165 170 175  
  
Trp Gln Lys Leu Arg Ala Ala Val Glu Tyr Thr Ser Val Val Leu Phe  
180 185 190  
  
Ser Leu Glu Lys Glu Phe Leu Val Ala Asp Ile Ile Asp Ala Tyr Ala  
195 200 205  
  
Lys Phe Gly Val Glu Val Asn Arg Met Thr Ile Lys Arg Arg Leu Ile  
210 215 220  
  
Asn Thr Gly Val Ile Val Ser Thr Asn Lys Met Ala Ala Ser Cys Lys  
225 230 235 240  
  
Gly Lys Gly Ala Lys Pro Ala Thr Val Tyr Arg Leu Ala Ser His Glu  
245 250 255  
  
Val Thr Tyr Phe Gln Thr Cys Leu Arg Gly  
260 265

<210> 4  
<211> 555  
<212> DNA  
<213> Vibrio metschnikovii RH530

<220>  
<221> CDS  
<222> (1)..(555)  
<223> valL2 gene

amended Sequence Listing.txt

<400>	4	
atg cag att att ctt gtt cat gga ctc tat atg cat ggc ttg gta atg		48
Met Gln Ile Ile Leu Val His Gly Leu Tyr Met His Gly Leu Val Met		
1 5 10 15		
cat ccg ctt agt cat cgt ctg cat aaa ttg ggt tat cgt act caa acc		96
His Pro Leu Ser His Arg Leu His Lys Leu Gly Tyr Arg Thr Gln Thr		
20 25 30		
att agc tac aac tca ctc gct atc gat gat gag gcc att ttt cgc cgc		144
Ile Ser Tyr Asn Ser Leu Ala Ile Asp Asp Glu Ala Ile Phe Arg Arg		
35 40 45		
ctt gac cga tcg ctc act cat gcc tcg cct aat gct tta gtc gga cac		192
Leu Asp Arg Ser Leu Thr His Ala Ser Pro Asn Ala Leu Val Gly His		
50 55 60		
agt ttg ggc gga ttg gtg atc aaa cgt tat cta gaa tcg cgc gca ccc		240
Ser Leu Gly Gly Leu Val Ile Lys Arg Tyr Leu Glu Ser Arg Ala Pro		
65 70 75 80		
tcc tgt gaa acc ctc tcc cat gtc gtc gcc atc ggc tca cct ttg caa		288
Ser Cys Glu Thr Leu Ser His Val Val Ala Ile Gly Ser Pro Leu Gln		
85 90 95		
gga gct tcc att gtc aat aaa att gag caa tta ggt tta ggg gtg gca		336
Gly Ala Ser Ile Val Asn Lys Ile Glu Gln Leu Gly Leu Gly Val Ala		
100 105 110		
cta ggt aat tca gca gaa ttt ggg tta aaa gaa cac gac gac gaa tcc		384
Leu Gly Asn Ser Ala Glu Phe Gly Leu Lys Glu His Asp Asp Glu Ser		
115 120 125		
cgc tat cca caa aaa tca ggc agt att gca gga acg ata cct tta ggg		432
Arg Tyr Pro Gln Lys Ser Gly Ser Ile Ala Gly Thr Ile Pro Leu Gly		
130 135 140		
ctg cgc agc ctt tta ctg cgc gat cca ctg gac tcc gat ggt acc gtc		480
Leu Arg Ser Leu Leu Leu Arg Asp Pro Leu Asp Ser Asp Gly Thr Val		
145 150 155 160		
aca gta gaa gaa acc aaa ata gct ggc atg aca gat cat atc gcg ata		528
Thr Val Glu Glu Thr Lys Ile Ala Gly Met Thr Asp His Ile Ala Ile		
165 170 175		
tcc acc act tca tac gag aat gct gtt		555
Ser Thr Thr Ser Tyr Glu Asn Ala Val		
180 185		

<210> 5  
<211> 185  
<212> PRT  
<213> Vibrio metschnikovii RH530

<400>	5	
Met Gln Ile Ile Leu Val His Gly Leu Tyr Met His Gly Leu Val Met		
1 5 10 15		
His Pro Leu Ser His Arg Leu His Lys Leu Gly Tyr Arg Thr Gln Thr		
20 25 30		

amended Sequence Listing.txt

Ile Ser Tyr Asn Ser Leu Ala Ile Asp Asp Glu Ala Ile Phe Arg Arg  
35 40 45  
Leu Asp Arg Ser Leu Thr His Ala Ser Pro Asn Ala Leu Val Gly His  
50 55 60  
Ser Leu Gly Gly Leu Val Ile Lys Arg Tyr Leu Glu Ser Arg Ala Pro  
65 70 75 80  
Ser Cys Glu Thr Leu Ser His Val Val Ala Ile Gly Ser Pro Leu Gln  
85 90 95  
Gly Ala Ser Ile Val Asn Lys Ile Glu Gln Leu Gly Leu Gly Val Ala  
100 105 110  
Leu Gly Asn Ser Ala Glu Phe Gly Leu Lys Glu His Asp Asp Glu Ser  
115 120 125  
Arg Tyr Pro Gln Lys Ser Gly Ser Ile Ala Gly Thr Ile Pro Leu Gly  
130 135 140  
Leu Arg Ser Leu Leu Leu Arg Asp Pro Leu Asp Ser Asp Gly Thr Val  
145 150 155 160  
Thr Val Glu Glu Thr Lys Ile Ala Gly Met Thr Asp His Ile Ala Ile  
165 170 175  
Ser Thr Thr Ser Tyr Glu Asn Ala Val  
180 185

<210> 6  
<211> 117  
<212> PRT  
<213> Pseudomonas glumae

<400> 6  
Val Ala Asn Leu Ser Gly Phe Gln Ser Asp Asp Gly Pro Asn Gly Arg  
1 5 10 15  
Gly Glu Gln Leu Leu Ala Tyr Val Lys Gln Val Leu Ala Thr Thr Gly  
20 25 30  
Ala Thr Lys Val Asn Leu Ile Gly His Ser Gln Gly Leu Thr Ser  
35 40 45  
Arg Tyr Val Ala Ala Val Ala Pro Gln Leu Val Ala Ser Val Thr Thr  
50 55 60  
Ile Gly Thr Arg His Arg Gly Ser Glu Phe Ala Asp Phe Val Gln Asp  
65 70 75 80  
Val Leu Lys Thr Asp Pro Thr Gly Leu Ser Ser Thr Val Ile Ala Ala  
85 90 95  
Phe Val Asn Val Phe Gly Thr Leu Val Ser Ser Ser His Asn Thr Asp  
100 105 110  
Gln Asp Ala Leu Ala  
115

amended Sequence Listing.txt

<210> 7  
<211> 117  
<212> PRT  
<213> Burkholderia cepacia

<400> 7  
Val Ala Asn Leu Ser Gly Phe Gln Ser Asp Asp Gly Pro Asn Gly Arg  
1 5 10 15  
Gly Glu Gln Leu Leu Ala Tyr Val Lys Gln Val Leu Ala Thr Thr Gly  
20 25 30  
Ala Thr Lys Val Asn Leu Val Gly His Ser Gln Gly Gly Leu Ser Ser  
35 40 45  
Arg Tyr Val Ala Ala Val Ala Pro Gln Leu Val Ala Ser Val Thr Thr  
50 55 60  
Ile Gly Thr Arg His Arg Gly Ser Glu Phe Ala Asp Phe Val Gln Asp  
65 70 75 80  
Val Leu Ala Tyr Asp Pro Thr Gly Leu Ser Ser Ser Val Ile Ala Ala  
85 90 95  
Phe Val Asn Val Phe Gly Ile Leu Thr Ser Ser Ser His Asn Thr Asn  
100 105 110  
Gln Asp Ala Leu Ala  
115